Broadband Internet Access: An Introduction

Internet Access

While the Internet continues to play a greater role in our lives, the way we access the Internet is evolving as rapidly as how we use it.

Traditional dial-up access (using normal voice telephone line technology) suffices for many consumers. However, other consumers either prefer or need the much faster connections that technological advances now allow.

Broadband

"Broadband" and "high-speed" are synonyms. Both terms generally refer to Internet connections that transmit data at speeds greater than 200 kilobytes per second (Kbps), compared to the 56 Kbps maximum speed currently offered by traditional dial-up connections.

Business and residential users alike are using broadband to increase their productivity and enhance their use of the Internet. Broadband allows access to a wide variety of wholesale and retail e-commerce transactions as well as activities like telemedicine, entertainment and research. Much like highways, basic utility services and schools, high-speed Internet access is now seen as a vital piece of a community's infrastructure impacting both economic development and the quality of life.

Additional Information

- FCC Broadband Information: **www.fcc.gov**
- National Telecommunications and Information Administration: **www.ntia.doc.gov**
- Indiana Office of Utility Consumer Counselor (OUCC) **www.in.gov/oucc**
- Indiana Utility Regulatory Commission (IURC): **www.in.gov/iurc**

The Indiana Office of Utility Consumer Counselor (OUCC) is committed to the expansion of high-speed Internet availability to businesses and residential consumers throughout the state. The OUCC is partnering with other state agencies and the private sector in efforts to expand broadband access.

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Broadband Options

Broadband technology – and its growth into new markets – is evolving rapidly. Consumers are encouraged to stay informed about possible options and to express their concerns when adequate options are not available in their areas.[1]

The following table provides a very brief overview of broadband service options that may fit within residential and small business budgets. Consult with local providers (local Yellow Pages under "Internet") and review information on the Web for more specific details and service availability in your area.

Type of Service	How it Works	Advantages	Disadvantages	Speeds
Satellite **Fixed Wireless** **Wireless Fidelity (WiFi)**	Radio waves transmit data from either a satellite or a land-based antenna to the user.	Generally offered as a substitute in rural areas that may not be served by cable or DSL. Also, WiFi is being offered in numerous areas known as "hot spots"- mainly in urban regions. Various download speeds, typically faster than cable or DSL.	Slower upstream speeds. Ground objects and radio signals may interfere.	WiFi ranges from 1 Mbps - 11 Mbps with satellite ranging from 500 Kbps - 2 Mbps, depending on interference and proximity to transmitter. [2]
Cable	Using a cable modem, the same connections used for cable television can also carry Internet data.	High capacity. Uses a building's existing cable TV wiring. Allows use of telephone for voice calls while accessing the Internet.	Increased network usage can slow service.	Download Speeds: 550 Kbps - 4 Mbps. Upload Speeds: generally at 128 Kbps.
Digital Subscriber Line (DSL)	Using a DSL modem, Internet data are transmitted over specially conditioned telephone lines.	Uses a building's existing telephone wiring. Allows use of telephone for voice calls while accessing the Internet.	Ability to use services and/or connection speed can vary based on distance from the telephone company's central office.	Download Speeds: 300 Kbps - 3 Mbps. Upload Speeds: 128 Kbps - 3 Mbps. Speeds of up to 6Mbps are available in some areas.
Broadband over Power Line (BPL)	Using a converter that plugs into a building's existing electrical outlets, allows for the transmission of data over an electric utility's power lines.	Uses a building's existing electrical wiring. Allows use of telephone for voice calls while accessing the Internet.	New technology being introduced. Currently not widely available in Indiana.	Still undefined, but typically between 500 Kbps - 4 Mbps [3]
*** Dial-Up**	A traditional modem connects the computer to the building's existing telephone lines, which carry data.	Available virtually everywhere. Inexpensive.	Slower speeds than any of the broadband options.	Available up to 56 Kbps, upload and download, depending on connection.

* Dial-Up is not a Broadband technology and is listed in this chart strictly for comparison purposes.

Consumer Concerns

Federal and state policy is to generally let new telecommunications services grow in a less regulated, more competitive environment. Internet Service Providers (ISPs) operate under minimal regulation, much like providers of cellular/wireless phone service. The Federal Communications Commission (FCC) retains primary jurisdiction over the regulated aspects of Internet access services.

Consumers with questions or complaints about Internet access service should contact their service providers. If the provider cannot resolve the matter, the consumer should direct the concern to a local Better Business Bureau (BBB), the Federal Trade Commission (FTC), the Federal Communications Commission (FCC), or the Indiana Attorney General's office (if consumer fraud is suspected).

Consumers are also encouraged to contact the Indiana Utility Regulatory Commission (IURC) with any Internet service concerns (toll-free at 1-800-851-4268 or online at www.in.gov/iurc). While the IURC cannot resolve individual Internet service complaints, it is gathering and tracking data regarding telecommunications services. This information will be included in future reports to the Indiana General Assembly and may also be reported to other appropriate entities.

The IURC's tracking efforts may help identify trends and problems for legislators to consider when reviewing Indiana's telecommunications laws in the future. By sharing telecommunications concerns with the IURC, consumers can help ensure the most accurate tracking and reporting possible.

The OUCC, IURC and other state agencies continue to work with telecommunications providers to facilitate high-speed Internet access expansion in urban and rural areas throughout the state.

Comparing Speeds

Average Time Required to Download Different Items Using Internet Access Services (Assuming Optimal Conditions) [4]

Internet Functions	Dialup (56k)	Satellite (512k)	DSL/Cable (1M)	Wireless (5M)
An e-mail	1 sec.	<1 sec.	<1 sec.	<1 sec.
A basic Web page (25K)	10 sec.	<1 sec.	<1 sec.	<1 sec.
One Five-Minute Song (5M)	15 min.	2 min.	1 min.	40 sec.
One Two-Hour Movie(500M)	20 hrs.	4 hrs.	2 hrs.	70 min.

FOOTNOTES:

[1]Some table info is from Broadband Basics, a report from the U.S. Chamber of Commerce.
[2]Newton's Telecom Dictionary
[3]www.speedguide.net
[4]University of Texas study, (LBJ School of Public Affairs' Policy Research Project)

The Indiana Office of Utility Consumer Counselor (OUCC) is the state agency representing the interests of utility consumers and the general public in matters related to the provision of utility services. The OUCC is active in proceedings before regulatory and legal bodies and is committed to giving consumers a voice in the creation of utility service policy.

OpenLines publications are produced by the OUCC to educate consumers on their rights and responsibilities regarding utility services. Fact sheets on many telecommunications and other utility topics are available free of charge. All OpenLines publications are available on the OUCC Web site or by calling the OUCC Consumer Services Staff.

This OpenLines publication is a public service of the Indiana Office of Utility Consumer Counselor (OUCC) in conjunction with the Indiana Utility Regulatory Commission (IURC), AT&T Indiana and Verizon.

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Indiana Office of Utility Consumer Counselor
100 N. Senate Av., Room N501 • Indianapolis, IN 46204-2215
www.openlines.in.gov • toll-free: 1-888-441-2494 • voice/TDD: 317-232-2494 • fax: 317-232-5923

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